

Application No. 09/917,700
Amendment dated December 19, 2005
Reply to Office Action of September 19, 2005

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AMENDMENTS TO THE CLAIMS

Claims 1 - 15. (Cancelled)

16. (New) A reproducing method for reproducing information from an optical disc having a pit recording area recorded with various control information by a prepit, and a user recording area having a guide groove as a track, the method comprises the steps of:

irradiating a laser beam from a light source on the disc;

receiving reflection light from the disc by a light detector, wherein the light detector having four areas defined as first area to fourth area in a first direction of a tangential line of the track and in a second direction orthogonal to the tangential line, and wherein a first pair of a first area and a second area and a second pair of a third area and a fourth area are both aligned in the first direction, a third pair of the first area and the fourth area and a fourth pair of the second area and the third area are both aligned in the second direction;

detecting a pit signal as a control information signal in a form of a tangential push-pull reproduced signal by using the third pair and fourth pair, when the laser beam is irradiated on the pit recording area, wherein the tangential push-pull reproduced signal is the difference of pit signals detected by the third pair and fourth pair;

detecting a user information signal as an aggregated signal by using every first to fourth area, when the laser beam is irradiated on the user recording area, wherein the aggregated signal is the aggregation of signals detected by every first to fourth area;
and

decoding the tangential push-pull reproduced signal or the aggregated signal.

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17. (New) A reproducing method as claimed in claim 16, wherein said decoding step obtains a signal equalized in a desirable partial response characteristic from the tangential push-pull reproduced signal by using a waveform equalizing circuit.

18. (New) A reproducing method as claimed in claim 16, wherein said decoding step decodes the tangential push-pull reproduced signal and the aggregated signal by using a viterbi decoder.

19. (New) A reproducing method as claimed in claim 17, wherein a partial response polynomial equation for equalizing the tangential push-pull reproduced signal in the partial response characteristic is $1+D-D^2-D^3$.

20. (New) A reproducing method as claimed in claim 17, wherein said decoding step decodes the tangential push-pull reproduced signal and the aggregated signal by using a viterbi decoder.

21. (New) A reproducing method as claimed in claim 18, wherein a partial response polynomial equation for equalizing the tangential push-pull reproduced signal in the partial response characteristic is $1+D-D^2-D^3$.